

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-21. (Canceled).

22. (Currently Amended) Cooling system (10) for cooling heat-generating installations (44, 46, 48) and for maintaining the temperature of closed-off areas at below cabin temperature in an aircraft, the cooling system comprising:

a refrigerating installation (12) in the aircraft, including at least two refrigeration machines (18, 20) which operate independently of one another in parallel;

at least one refrigeration consumer (44, 46, 48) constructed as a heat generating installation or as an area to be maintained at a temperature below cabin temperature;

a refrigeration transport system (14) connecting the refrigerating installation (12) and the refrigeration consumer (44, 46, 48); and

a central control unit operatively coupled to the refrigerating installation (12) and controlling the refrigeration capacity of the at least two refrigeration machines (18, 20) depending on at least one parameter indicating the current refrigeration demand, such that each of the at least two refrigeration machines (18, 20) operates, on the average, for substantially the same amount of time,

wherein the refrigerating installation (12) covers the maximum refrigeration requirement of the at least one refrigeration consumer (44, 46, 48),

wherein the at least one refrigeration consumer (44, 46, 48) is supplied with cold generated in the refrigerating installation (12) via a refrigerating agent circulating in the refrigeration transport system (14),

wherein a conveying pipe (28) having a shut-off valve (29) is provided, the shut-off valve (29) opening to feed at least a portion of which feeds the refrigerating agent from the refrigerating installation (12) by bypassing the at least one refrigeration consumer (44, 46, 48) directly to a pump unit (30) and back to the refrigerating installation (12), the shut-off valve (29) closing to force all of the refrigerating agent from the refrigerating installation (12) to the at least one refrigeration consumer (44, 46, 48), the shut-off valve (29) thereby controlling a refrigeration output of the cooling system based on a changing refrigeration requirement.

23. (Canceled).

24. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the number of refrigeration machines (18, 20) of the refrigerating installation (12) is chosen in such a way that the refrigeration requirement of the aircraft is covered during ground operation.

25. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that at least one refrigeration machine (18, 20) uses air inside the pressurised fuselage of the aircraft as a heat sink for emitting heat.

26. (Previously Presented) Cooling system (10) according to claim 22,

characterised in that at least one refrigeration machine (18, 20) generates cold by a vapour cycle refrigeration process.

27. (Previously Presented) Cooling system (10) according to claim 22,

characterised in that the refrigeration transport system (14) has at least one refrigerating agent pump (32, 34) for circulating the refrigerating agent.

28. (Previously Presented) Cooling system (10) according to claim 22,

characterised in that the refrigeration transport system (14) has at least one store (40) for compensating for thermal expansion and leakage losses of the refrigerating agent.

29. (Previously Presented) Cooling system (10) according to claim 22,

characterised in that the at least one refrigeration consumer (44, 46, 48) has a secondary refrigeration transport system in which cold is transmitted from the refrigerating agent by means of a secondary refrigerating agent.

30. (Canceled).

31. (Previously Presented) Cooling system (10) according to claim 22,

characterised in that the parameters indicating the current refrigeration demand reproduce the temperature of the refrigerating agent at at least one point in the refrigeration transport system (14) or/and information on the refrigeration demand of the at least one refrigeration consumer (44, 46, 48) or/and the pressure of the refrigerating agent in the refrigeration transport system (14).

32. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the refrigeration capacity is controllable by switching on and off individual refrigeration machines (18, 20) of the refrigerating installation (12) to match the current refrigeration demand in the aircraft.
33. (Canceled).
34. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the refrigeration machines are controlled in decentralised manner, in particular by an automatic and time-dependent activation based on a monitoring of the actual status of all refrigeration machines via a databus.
35. (Previously Presented) Cooling system (10) according to claim 34,
characterised in that the refrigeration machines are activatable according to a predetermined prioritisation.
36. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the refrigerating agent flows through both a switched on refrigeration machine (18, 20) and a switched off refrigeration machine.
37. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that a shut-off valve is assigned to each refrigeration machine.

38. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the refrigeration capacity of the at least one refrigeration machine (18, 20) is controllable by means of the control device.
39. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that the control unit detects the outflow temperature of the refrigerating agent leaving the refrigeration machine (18, 20) and activates the refrigeration machine (18, 20) in accordance with the detected outflow temperature.
40. (Previously Presented) Cooling system (10) according to claim 39,
characterised in that the refrigeration capacity of the at least one refrigeration machine (18, 20) can be altered by means of a hot gas bypass valve and/or by varying the speed of a compressor used in the refrigeration machine (18, 20).
41. (Previously Presented) Cooling system (10) according to claim 22,
characterised in that to influence the refrigeration capacity of the cooling system (10) the control unit alters the amount of refrigerating agent conveyed in the refrigeration transport system (14).
42. (Previously Presented) Cooling system (10) according to claim 41,
characterised in that to influence the refrigeration capacity the control unit alters the speed of the at least one refrigerating agent pump (32, 34).

43. (Currently Amended) Method of cooling heat generating installations in an aircraft, the method comprising:

coupling at least two refrigeration machines in parallel to a refrigeration transport system in the aircraft, the two refrigeration machines being configured to cover the maximum refrigeration requirement of the heat generating installations;

delivering cold refrigeration agent through the refrigeration transport system to the heat generating installations;

conveying at least a portion of the cold refrigeration agent from the refrigeration transport system through a bypass pipe having a shut-off valve leading back to a pump unit and the at least two refrigeration machines, the shut-off valve opening and closing to control a refrigeration output of the cooling system based on a changing refrigeration requirement; and

controlling operating the at least two refrigeration machines to operate for an equal amount of time on average.